Message

From: Cosler, Doug [Doug.Cosler@TechLawInc.com]
Sent: 6/22/2017 10:48:18 PM
To: d'Almeida, Carolyn K. [dAlmeida.Carolyn@epa.gov]; Davis, Eva [Davis.Eva@epa.gov]; Dan Pope [DPope@css-inc.com]; Wayne Miller [Miller.Wayne@azdeq.gov]; Jennings, Eleanor [Eleanor.Jennings@parsons.com]; Steve Willis [steve@uxopro.com]; Bo Stewart [Bo@Praxis-Enviro.com]
CC: Brasaemle, Karla [Karla.Brasaemle@TechLawInc.com]
Subject: RE: Williams - ST012 - Period ending 5/12 report

We have to be very careful about comparing biodegradation and mass transfer in the vapor-filled unsaturated zone with EBR in the saturated zone. Note that the volume-averaged modeling shows that even for an optimistic 20-year TOR for the UWBZ, only about 6,000 gallons of LNAPL will be biodegraded in a 20-year period in the saturated UWBZ. That equates to about 25 gallons of JP-4 fuel/month on average.

With the SVE they are drawing in huge volumes of air/O2, thus facilitating more rapid aerobic biodegradation to occur continuously without any depletion of O2 inside the LNAPL zones. And, the molecular diffusion coefficient in air is about 10,000 times greater than water, so there's no bottleneck on delivering O2 into the LNAPL zones (i.e., advection and diffusion in unsaturated zone are large). Molecular diffusion of TEA in groundwater is extremely slow by comparison. So would methane transport out of the saturated zone into the vadose zone.

-----Original Message-----
From: d'Almeida, Carolyn K. [mailto:dAlmeida.Carolyn@epa.gov]
Sent: Thursday, June 22, 2017 6:00 PM
To: Davis, Eva <Davis.Eva@epa.gov>; Dan Pope <DPope@css-inc.com>; Wayne Miller <Miller.Wayne@azdeq.gov>; Jennings, Eleanor <Eleanor.Jennings@parsons.com>; Steve Willis <steve@uxopro.com>; Bo Stewart <Bo@Praxis-Enviro.com>
Cc: Cosler, Doug <Doug.Cosler@TechLawInc.com>; Brasaemle, Karla <Karla.Brasaemle@TechLawInc.com>
Subject: RE: Williams - ST012 - Period ending 5/12 report

That's why the made the effort today to demonstrate how much methane they are pulling out as evidence that biodegradation is occurring. But I still think the key question is why is the trend in methane production declining from initial record right after SVE startup. Does this represent methane production from decades of biodegradation before SEE which they just now recovered, and is tapering off as it is extracted, and maybe does not reflect current biological conditions?

Carolyn d'Almeida
Remedial Project Manager
Federal Facilites Branch (SFD 8-1)
US EPA Region 9
(415) 972-3150

"Because a waste is a terrible thing to mind…"

-----Original Message-----
From: Davis, Eva
Sent: Thursday, June 22, 2017 2:31 PM
To: Dan Pope <DPope@css-inc.com>; d'Almeida, Carolyn K. <dAlmeida.Carolyn@epa.gov>; Wayne Miller <Miller.Wayne@azdeq.gov>; Jennings, Eleanor <Eleanor.Jennings@parsons.com>; Steve Willis <steve@uxopro.com>; Bo Stewart <Bo@Praxis-Enviro.com>
Cc: Cosler, Doug <Doug.Cosler@TechLawInc.com>; Brasaemle, Karla <Karla.Brasaemle@TechLawInc.com>
Subject: RE: Williams - ST012 - Period ending 5/12 report

You people need to see where the high temperatures are in relation to where they plan on trying to treat

-----Original Message-----
From: Dan Pope [mailto:DPope@css-inc.com]
Sent: Thursday, June 22, 2017 4:29 PM
To: d'Almeida, Carolyn K. <dAlmeida.Carolyn@epa.gov>; Davis, Eva <Davis.Eva@epa.gov>; Wayne Miller <Miller.Wayne@azdeq.gov>; Jennings, Eleanor <Eleanor.Jennings@parsons.com>; Steve Willis <steve@uxopro.com>; Bo Stewart <Bo@Praxis-Enviro.com>
Cc: Cosler, Doug <Doug.Cosler@TechLawInc.com>; Brasaemle, Karla <Karla.Brasaemle@TechLawInc.com>
Subject: RE: Williams - ST012 - Period ending 5/12 report

Sounds reasonable to me.

-----Original Message-----
From: d'Almeida, Carolyn K. [mailto:dAlmeida.Carolyn@epa.gov]
Sent: Thursday, June 22, 2017 4:27 PM

To: Davis, Eva; Dan Pope; Wayne Miller; Jennings, Eleanor; Steve Willis; Bo Stewart
Cc: Cosler, Doug; Brasaemle, Karla
Subject: RE: Williams - ST012 - Period ending 5/12 report

Just a guess, but I think the concern is a 1 degree change in temp over course of day could be a stressor on the bugs that are present in that location. I suspect they realize that EBR wont be effective in the SEE treatment area because it is too hot, that's why they are focusing on the perimeter. And if they do significant extraction, the temperature redistribution will kill off the bugs that are present.

Carolyn d'Almeida
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"Because a waste is a terrible thing to mind…"

-----Original Message-----
From: Davis, Eva
Sent: Thursday, June 22, 2017 2:10 PM
To: d'Almeida, Carolyn K. <dAlmeida.Carolyn@epa.gov>; Dan Pope <DPope@css-inc.com>; Wayne Miller <Miller.Wayne@azdeq.gov>; Jennings, Eleanor <Eleanor.Jennings@parsons.com>; Steve Willis <steve@uxopro.com>; Bo Stewart <Bo@Praxis-Enviro.com>
Cc: Cosler, Doug <Doug.Cosler@TechLawInc.com>; Brasaemle, Karla <Karla.Brasaemle@TechLawInc.com>
Subject: FW: Williams - ST012 - Period ending 5/12 report

I have a real disconnect on this - hope the microbiologists on the call know more about this than I do - they are concerned that a 1F/day temperature increase in the extraction wells could affect the microbial population, but they think the temps out there (see attached report and look at where the TMPs are relative to where they plan on pumping) aren't a problem? Can those bugs work at temps up to 200F?

-----Original Message-----
From: Smallbeck, Donald R. [mailto:Donald.Smallbeck@amecfw.com]
Sent: Monday, June 12, 2017 10:06 AM
To: 'Wayne Miller' <Miller.Wayne@azdeq.gov>; d'Almeida, Carolyn K. <dAlmeida.Carolyn@epa.gov>
Cc: JERRARD, CATHERINE V CIV USAF HAF AFCEC/CIBW <catherine.jerrard@us.af.mil>; Pearson, Stuart C. <Stuart.Pearson@amecfw.com>; 'steve@uxopro.com' <steve@uxopro.com>; Davis, Eva <Davis.Eva@epa.gov>; d p <DPope@css-dynamac.com>; 'Brasaemle, Karla' <KBrasaemle@TechLawInc.com>; Levine, Herb <Levine.Herb@epa.gov>
Subject: Williams - ST012 - Period ending 5/12 report

BCT members

Please find attached for your information the preliminary report describing ST012 activities for the period from April 29 thru May 12, 2017.

D.R. Smallbeck
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Construction Remediation

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